

WHAT THE WAR TAUGHT AMERICAN AVIATION

Travel

OCTOBER 1945

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American Museum of Natural History

THE SHORT NECKED GIRAFFE

The first rumors of the existence of the okapi reached the civilized world in 1890 with the publication of Sir Henry Stanley's *In Darkest Africa*. The okapi is a short necked giraffe similar in type to animals that lived in Europe in the Pliocene period.

EVEN A GREAT MAN can make a mistake, especially when he ventures to issue a definite statement about something where a mere guess would be risky to make. One of the more famous blunders of this type is connected with the name of a French scientist who is known as the "Father of Paleontology," the knowledge of fossil animals.

His name was Georges Léopold Chrétien Frédéric Dagobert, Baron de Cuvier. And his statement, made with great solemnity and addressed to the French Academy, concerned zoological discoveries. New zoological discoveries, Cuvier asserted, could be made only by delving into the past of the planet. The earth's crust harbored countless varieties of extinct animals still to be discovered, and fame awaited their discoverers. But as for living animals, he said dogmatically, there were no important living animals left to discover.

Cuvier said this more than a century ago, and the amazing thing is that he was right for some three-score years and more. Fossil hunters all over the world, and especially in America, won fame by unearthing the most incredible collections of extinct saurians and mammals.

The Quest for Africa's Unknown Animals

by Willy Ley



The range of the okapi is the Ituri Forest, a region roughly 700 by 150 miles in the Belgian Congo.

But no hunter of living animals returned from anywhere with astonishing news. New butterflies and lizards from South America—yes. Some new rodents and small marsupials from Australia—yes. A lot of small and sometimes very interesting fishes from the bottom of the ocean and from obscure inland rivers, especially in the tropics—yes. But nothing that would impress the outsider as something that would spill over from professional literature into the sea of daily newsprint and make an audible splash.

A French priest re-discovered the Asiatic musk-deer, about which vague reports had come to Europe earlier. Somebody brought the first skin of the giant panda from China—a discovery that was not at all appreciated because at first the giant panda was thought to be merely a new variety of bear. For many decades zoologists felt inclined to agree with Cuvier wholeheartedly as far as large forms of animal life were concerned. They were busy with the then new idea of evolution, and there the proper interpretation of

known forms of life (and the discovery of fossils) seemed more important than "new" animals.

The single real important discovery made during those decades from about 1820 to about 1890, the finding of the Australian lungfish in the Burnett River, did not get the attention it deserved until near the end of the century Ernst Haeckel sent his pupil Richard Semon to Australia for the specific purpose of studying this one fish. And it was just at that time that new facts began to show how careless Cuvier had been.

The new century ushered in a series of very remarkable discoveries of new animals—and the skeptical attitude maintained for so many decades became more and more conciliatory as time went on and new discoveries kept coming in.

Naturally one cannot say that "zoological science" of today holds a viewpoint diametrically opposed to that of Cuvier. In the first place a science is not a political party where every member is supposed to adhere to a platform and conform to a policy. If all scientists agree on one point, it is because all facts force them to agree. Where facts are not so definite, two equally important members of the profession may hold mutually exclusive views, or else they may not have any opinion to offer on a certain problem. Nobody is interested in the whole of his subdivision in the field of knowledge.

As regards the question of the existence of undiscovered animals even now, well over a dozen decades after Cuvier, those zoologists who are interested in it are inclined to be open-minded. They know that about ten per cent of the land surface of the earth—not

even including Antarctica—are still virtually or completely unexplored, a lot can be in hiding in those ten per cent. They know that the oceans still harbor not only one but many mysteries—the accidental discovery (in 1938) of a fish believed to be extinct for more than sixty-five million years taught a lesson.

Those zoologists who are connected with the few big houses specializing in the animal trade are even more lenient, and, it may be added, better acquainted with still unverified reports. They go so far as to point at certain spots on the globe and to voice some suspicions. Sumatra, for example, is known to harbor a "new" variety of rhinoceros, in addition to the well known type. Specimens have even been shot on occasion, but so far never under circumstances which permitted a complete scientific investigation.

New Guinea is said to be the home of a large marsupial, and Burma is believed to harbor a variety of deer, black in color and reported to have a strange call, curiously resembling the barking of a dog. Even Europe may still boast an undiscovered animal in the Swiss and Austrian Alps, described as a large and very rare lizard which is believed to be an Old World counterpart of the American Gila Monster.

But the "promised land" for still undiscovered animals is neither Burma nor the region of large tropical islands between Australia and the Asiatic mainland. It is Africa. More precisely, it is the equatorial belt of Africa, some ten degrees north and south of the equator, stretching roughly two thousand miles across the African continent and extending for about a thousand miles on either side of the equator. To narrow the state-

ment down some more, it is the Rainy Forest in that equatorial belt on which suspicion has been focussing for the last forty years.

The area of the Rainy Forest, while not delineated on ordinary maps as a rule, can be traced without much difficulty even on a political map of the dark continent. It begins about at the mouth of the Niger River and follows the Niger upstream until it meets one of its most important tributaries, the Benué. Then the line follows the Benué river eastwards, cuts across to the Ubangi and Uellé rivers which it follows eastward to the Ruwenzori Mountains, just West of Lake Victoria. Then it goes straight South, to Lake Albert Edward and the northern section of Lake Tanganyika, from there back in a westerly direction to the Kasali River and the Congo, to end up on the shore of the Atlantic Ocean near the mouth of the Congo itself.

It is this Rainy Forest, and the territory bordering it from all sides, which still harbors a number of "mystery animals," dimly known to science through incomplete (and not invariably trustworthy) reports. It is this section which has produced four major zoological discoveries within three decades.

The first was the okapi, a short-necked relative of the giraffe which has been known since antiquity.

The first rumors of its existence reached the civilized world in about 1890 when Sir Henry Stanley published his book *In Darkest Africa*. Reporting on one of the pygmy tribes of the Congo region, the Wambutti, Sir Henry stated that they had a word *atti* which meant "donkey" and that such *attis* were occasionally caught in pits.

On the surface this sounds simple enough, but to experts this short statement was rather mysterious. No donkey was known from that section. It might be a zebra, possibly one of the zebras with less well-defined stripes than the "proverbial" zebras. But zebras avoid forests and those Wambutti lived where the forest was densest and most inhospitable, being pushed into these sections by the normal-sized Negro tribes who were, most of the time, their enemies.

One of the men pondering this problem, Sir Harry Johnston, decided that there either existed a variety of zebra which did not mind forest environment, or else that there was an unknown animal, more or less resembling a donkey, in the Wambutti territory. He set out to investigate that problem at the earliest opportunity . . . and now the books state that "Sir Harry Johnston discovered the okapi in the Congo Forest in 1900." At first it was actually believed to be a new variety of zebra, but one year later, when two complete skins and a skull reached London, the novel fact of a surviving short-necked giraffe (such short-neck giraffes were well known as fossils from the late Tertiary of Greece and Samos) was established and the Negro name okapi was officially adopted for the animal.

The range of the okapi is roughly an oblong, 700 miles from west to east and 150 miles from north to south, in the northeastern

THE PYGMY HIPPO

The *Choeropsis*, or pygmy hippo of Liberia, was thought to be extinct until the German explorer Hans Schomburgk rediscovered it in 1910. An adult pygmy hippo is only one-fourteenth the size of an adult Nile hippo.



New York Zoological Society

corner of the Rainy Forest, along the Uëlle River. More specifically this region is called the Ituri Forest,—and the Ituri Forest, the natives said, harbored an enormous wild hog, black in color and as big as a small rhinoceros.

Sir Henry Stanley who had delivered the report on the *atti* had heard about this mysterious animal too, but all he could do was to postpone the solution of the riddle.

The ferocious forest hog of the natives remained a riddle for a full quarter of a century. Then it found its solution, and the solution was simple: the animal existed. Captain R. Meinertzhagen of the British East African Rifles discovered it in 1904, securing an imperfect skin that had come from the forest on the southeastern side of Mount Kenya. He also obtained a skull from the forest bordering Victoria Lake. The animal is now known as the forest hog of the African Rainy Forest, or, more scientifically, as *Hylochoerus meinertzhageni*. While not actually as large as a small rhinoceros it is by far the largest of the wild pigs of Africa and its fur is actually jet-black in color. Like the okapi it represents a form otherwise extinct and belonging to former periods of earth's history.

It was quickly learned that it ranged over a surprisingly large habitat, occurring not only in the Ituri Forest, but also in eastern Tanganyika, in the Cameroons, in Liberia and along the Ivory Coast.

The discovery that there was a Liberian variety, seemed to solve another old zoological puzzle. In 1688 a Dutchman, Dr. Dapper, had delivered himself of a ponderous descrip-

tion of the Liberian coast, or "Pepper Coast" as it was then called. In that description he had mentioned three varieties of wild hogs occurring there. Two were easily recognizable and quite ordinary, but the third was unknown. Doctor Dapper had stated that it was enormous, coal black in color and very dangerous because of its sharp teeth.

Hylochoerus seemed to fit into this description—but not quite. It is large, and black, and dangerous, and has enormous tusks. But the teeth are not actually sharp, they can rip, but not bite like a guillotine, which was precisely what that unknown wild hog was supposedly able to do.

Somebody guessed that Dr. Dapper's mysterious black hog was the same animal which had been described in 1844 by an American physician, Dr. Samuel G. Morton. All that Dr. Morton had to go by was the statement that the animal in question looked like a large pig, but he had a complete skull of that animal. From the skull Dr. Morton established that the "big pig" was actually a relative of the hippopotamus, a distant cousin of that well known monster, but of smaller size, "only" about six feet long. He called it *Choeropsis*; popular books referred to it as "pygmy hippo."

Some sixty years ago, a Dutchman by the name of Büttikofer saw a few complete specimens of *Choeropsis*, killed by native hunters. The skins were mounted in museums in Europe, but wrongly, since Büttikofer had never seen the animal alive. Furthermore, it was believed that the animal was extinct.

But rumors about "large pigs" kept coming

from Liberia. Some obviously referred *Hylochoerus*, others sounded much more like *Choeropsis*. But *Choeropsis* was extinct! About 1909 the rumors became too plentiful and Carl Hagenbeck in Germany finally sent his best man, Hans Schomburgk, to Liberia in order to find the real reason for all this talk. *Something* was to be discovered there, either the "extinct" *Choeropsis* or else something entirely new.

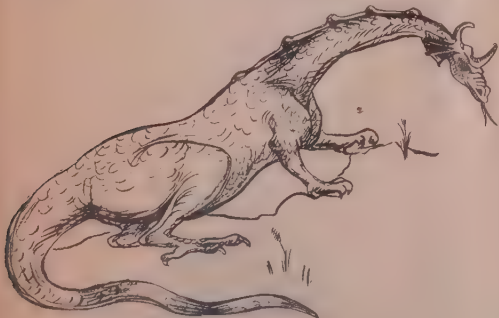
Schomburgk's expedition was by no means an easy one, the main difficulty was that every educated Liberian native or resident, colored or white, was fully convinced that *Choeropsis* was extinct. And the natives of the interior believed Schomburgk crazy, not because he was looking for this animal which they knew well, but because he wanted it alive. One could, with luck and sharp weapons, kill a *nigbve* (as they called it) but one could not catch it alive.

One year later Schomburgk brought live pygmy hippos back with him.

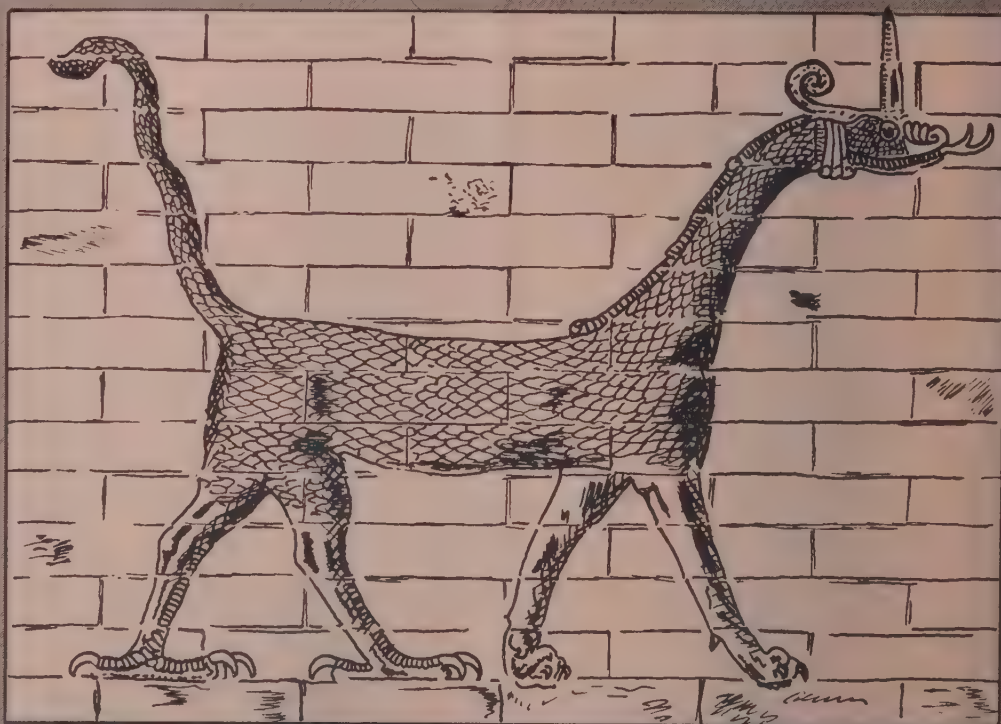
While Schomburgk's one-man expedition was going after *Choeropsis*, an expedition of the New York Zoological Society, consisting mainly of Herbert Lang and Dr. James Chapin, was trying to get a live okapi for the Bronx Park Zoo. Though they were successful in obtaining a young okapi, they did not succeed in getting it to America. But, unknowingly, they discovered a new bird. They brought native headdresses back with them, and careful examination at home showed that one of the headdresses contained feathers of unknown origin. For more than twenty years, from 1915 to 1936, Dr. Chap-

THE DRAGON OF BABYLON

The mysterious animal bas-relief on the Gate of the Temple of Ishtar at ancient Babylon was called either *mushrush* or *sirrush*, meaning splendor snake. Recent zoological research indicates that the *sirrush* might be a stylized representation of an actual animal. If the *sirrush* is a representation of an actual animal, the drawing below is a guess at what it would look like. The drawing is essentially based on the bas-relief of the Ishtar Gate, but conforms also to the sketchy descriptions available. The head ornaments of the original are interpreted as skinny appendages such as are possessed by several varieties of living lizards.



Olga Ley





FOREST HOGS AND OSTRICHES

The forest hog of the African Rain Forest is the largest of the wild pigs in Africa and its fur is jet black in color. It was discovered in 1904 by the British Lieutenant Meinertzhagen. Like the okapi it represents a form elsewhere extinct and belonging to former periods of earth's history. It has enormous tusks, possesses great strength and is exceedingly dangerous.



American Museum of Natural History

was haunted by the mystery of these unidentifiable feathers.

A chance discovery in a Belgian museum in 1936, consisting of an examination of two wrongly labelled stuffed birds, furnished a clue. These unidentifiable feathers had come from an African peacock (later called *Afropavo congensis*, "African peacock from the Congo") a so far completely unknown bird. The real peacock is Asiatic, and that Asiatic peacock and *Afropavo* are related to each other in about the same way as are okapi and giraffe, the two forms known since classic times turned out to be the more modern forms, while the recently discovered forms are the older ones, geologically speaking. All that remained to be done was to verify the actual habitat of the bird.

Dr. Chapin did this by flying to Stanleyville. *Afropavo* turned out to be well known to native hunters. It has a fairly restricted habitat, but is not excessively rare where it

occurs. The habitat is, one is tempted to write "of course," the eastern edge of the Rainy Forest, from the Ituri Forest down to the Sankuru River in the South.

Even if there were no rumors left it would be an obvious question to ask whether the Rainy Forest might not harbor more unknown creatures. The rumors say that it does, and a good number of them look fairly substantial. Hans Schomburgk gathered quite a number of them when he was looking for *Choeropsis* and told me about them one night in Berlin, about a dozen years ago.

While asking questions about "large pigs," with the purpose of locating the haunts of the pygmy hippo, he fell in again and again with reports of a small mountain rhinoceros. His informants directed him without hesitation to the mountain ranges of eastern Liberia. Now Schomburgk knew about Meinertzhagen's forest hog and that it had been termed "a small rhinoceros" on occasion. He also knew

that a native, trying to be polite and pleasing, will unhesitatingly affirm that there is, in Schomburgk's words, "a large animal with seven horns but only one eye and blue fur" if the interrogator shows inclinations to be told about such an animal.

So Schomburgk said, oh yes, the small rhinoceros, and proceeded to describe the forest hog. To his great surprise the native hunters contradicted vigorously and told him in what respects the "mountain rhinoceros" differed from the black pig. There also was no mistake about the differences between the "mountain rhino," the black forest hog and the "big pig" *nigbue* (*Choeropsis*); it was quite evident that the native hunters knew

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what they were talking about. Schomburgk came to the conclusion that the mountains of eastern Liberia actually harbor a small-size form of the rhinoceros, just as its forest harbors a smaller relative of the hippopotamus. But so far the small "mountain rhino" has not been discovered.

Another story which came to Schomburgk again and again was that of the "river elephant," said to be an unknown elephant, or at least an animal somehow comparable in size to an elephant, living near the rivers of some sections of the Rainy Forest. Although Schomburgk heard about that "river elephant" from numerous and independent sources, he did not quite believe it. It did not sound right, for example, that an animal which habitually lives near rivers should be covered with fur. But then a settler living near Lefini on the Congo River produced a piece of fur as evidence.

There was no doubt that it had come from a large animal, at least an animal of the size of *Choeropsis* which is about six feet long. In texture the skin greatly resembled an elephant's skin, and it was covered with thick reddish-brown fur. Schomburgk stated explicitly that he did not know of any animal having such skin, but is not sure, of course, that the unknown animal is actually a member of the elephant tribe.

The fact that the skin is fur-covered is no proof that it is not an elephant, the now extinct *Elephas primigenius* of Siberia, the so-called woolly mammoth, bore an exceptionally heavy fur. That the specimens of mammoth fur which are preserved in various museums happen to be of the same color as the fur of the still undiscovered "river elephant" should not mislead anyone, all experts are agreed. That these specimens are bleached by natural deterioration of the pigment over thirty thousand years and that the fur of the mammoth was much darker when the animal was still alive.

Other rumors of the Rainy Forest deal with a cat the size of a leopard but of different habits, an animal called *too* which is described as goat-sized and black and the so-called *chemiset*, or nandi bear, a bear-like animal which is said to be a forest dweller and a night prowler. It is said to be of a generally dark color, with especially heavy fur on the forequarters and all four legs, but lesser and smoother fur on the hindquarters. Various settlers have reported that this animal was occasionally killed by poisoned meat put out for hyenas, even photographs are said to have been taken, but so far the "nandi bear" has never been tracked down by a naturalist.

But the prize story of all the stories of unknown animals of equatorial Africa is that of the "Dragon of the Congo Forest," the animal *mokéle-mbémbe* of the natives.

Though it seems much more fantastic at first glance than any of the other reports it is actually one of the best documented. These other undiscovered animals are, after all, strange only because they are not yet known to science. Apart from that neither a small variety of rhinoceros, nor a bear-like carnivore, nor a large furry

animal, presumably of elephant-size, are incredible by themselves. We would entertain much more severe doubts about reports trying to describe the giraffe, if the giraffe were unknown.

But the animal *mokéle-mbémbe* is described as a living dinosaur!

This term has to be understood, of course, in the sense in which the layman uses it, not as it is used by the professional zoologist or paleontologist. To the paleontologist the term "dinosaur" means one specific group of extinct reptiles, ranging in size from *Compsognathus*, about as large as a bantam hen, to monsters like the well known *brontosaurus*. To the layman "dinosaur" simply means a large reptile.

The mysterious animal of the Congo Forest is probably not a dinosaur in the zoological sense, but it is, in all probability, a large reptile. Schomburgk carried one of the tales about such an animal. When, a little over thirty years ago, he came to Lake Bangweolo, outside the limits of the Rainy Forest proper, he was surprised that hippopotami were lacking, although the lake was just such a body of water which would harbor hippopotami. The natives of the vicinity had an explanation. The lake did not have hippopotami because it was inhabited by an animal which, although somewhat smaller in size, killed them.

Schomburgk did not pay any attention to the tale, but after his return, he mentioned it to his employer, Carl Hagenbeck. Hagenbeck did not laugh, he had many such reports, from various parts of Central Africa. The description given was usually "half elephant and half dragon" and some Bushman drawings were said to picture it.

Not only the tales of native hunters and of some whites pointed in that direction, there was also an old old picture which could be taken to contribute evidence. That picture came from the Ishtar Gate of Babylon, erected, according to archeological findings as well as according to tables with cuneiform writing, by King Nebuchadnezzar. The historical record is short and clear.

At the time of Nebuchadnezzar repeated heightening of the roads has so diminished the overhead clearance of the existing gates, that a new gate — with wall and courtyard — was constructed. And Nebuchadnezzar seized upon the opportunity to have a building constructed which, he hoped, would be talked about "by all mankind for all time," a hope which was fulfilled to a large extent. To express the splendor of the great king, the walls of the courtyard were covered with bricks glazed with a rich deep blue, an impressive sight even now, after reconstruction. More, colored bas-reliefs of animals were imbedded into the walls, a long row of majestically walking lions along the procession way, and alternating rows of *rimi* and *sirrushu* on the gate itself.

The *rimi* are wild oxen, the same kind which was called *urus* by the Romans, the *Bos primigenius* of zoologist. The *sirrushu*—this word is the plural form, the singular is *sirrush*—are the "dragons" of Babylon,

the same animal or mythical monster, which was killed by a minor prophet according to the apocrypha.

The question now arises whether the *sirrush* is a mythical monster or whether the Babylonians pictured an animal with which they were familiar and we are not. Off hand it would seem strange that they should place a mythical monster between two existing animals. The lions are real (they were put there because they were holy to Ishtar), the *rimi* or *uri* were presumably put there because the strong and wild *urus* was almost proverbially the game animal of the king, as other bas-reliefs show.

I think that, purely from the point of view of logic, the chances are even that the *sirrush* is the picture of an actually existing animal too. This assumption does not imply by any means that this animal was frequent or even that it occurred near the site of ancient Babylon. On the contrary, it may have been given its place of honor side by side with the *urus* and near the lion just because it was a "strange beast from far lands." The Biblical assertion that one was kept alive in the palace may be simple truth.

In build the *sirrush* is strongly reminiscent of certain extinct dinosaurs, with a long neck, with forefeet resembling the paws of a mammal and hindfeet looking like those of a bird. It has a forked tongue like snakes and monitor lizards and apparently some flaps of skinny membrane at the head, like certain chameleons and other living reptiles, especially the lizard *Chlamydosaurus* of Australia which, when in a hurry, runs on its hindfeet only. There seems to be only one horn, but that is a doubtful fact. All the animals of the Ishtar Gate are strongly stylized and drawn in strict profile, the *urus* also seems to have one horn only.

By contrast I'll now quote from a modern report which, unfortunately, has never been published in full. It was drawn up by Captain vom Stein zur Lausnitz, the leader of the Imperial German Likuala-Congo Expedition of 1913 which was interrupted by the outbreak of the first World War.

"The creature," Captain vom Stein wrote, "is reported not to live in the smaller rivers like the two Likualas, and in the rivers mentioned only a few individuals are said to exist. At the time of our expedition a specimen was reported from the non-navigable part of the Sanga River. . . ." Simul-

taneously with that report vom Stein received the report of the outbreak of World War I.

The reports received by Captain vom Stein seem to indicate that the animal has a very wide range not only in the Congo but also the Niger system (one report came from the Benué River) but that it is rare and solitary in its habits. It is described as having a very long and flexible neck, also a long and muscular tail like an alligator. In color it is said to be brownish-gray, in size intermediate between hippopotamus and elephant. It has only one long and straight horn.

"Canoes coming near it are said to be doomed; the animal is said to attack the vessels at once and to kill the crews but without eating the bodies. The creature is said to live in the caves that have been washed out in the clay of the shores at sharp bends. It is said to climb the shore even in daytime in search of food, its diet is said to be entirely vegetable. This feature disagrees with the possible explanation as a myth. The preferred plant was shown to me, it is a kind of liana with large white blossoms, with a milky sap and apple-like fruits. At the Ssömbo River I was shown a path said to have been made by this animal . . . there were plants of the described type nearby. But since there were too many tracks of elephants, hippos and other large mammals it was impossible to make out any particular spoor with any amount of certainty."

Vom Stein's report has been augmented later (in 1922) by a Belgian named Lepage who encountered an unknown animal while hunting in the Belgian Congo. Lepage stated that the animal chased him. After a while the animal abandoned the chase and Lepage examined it through his binoculars. He stated that it was about twenty-four feet long, with a horn above the nostrils and a long pointed snout, also with tusk-like horns.

All in all these stories agree fairly well with the mysterious animal picture on King Nebuchadnezzar's Ishtar Gate. Until we have definite evidence to the contrary it is easiest to assume that the two are one and the same animal.

And there can be little doubt that Central Africa still harbors a large long-necked animal of some kind which shows a definite preference for an aquatic environment and which is, in all probability a large reptile.



The peacock of the Rainy Forest was discovered by Dr. James P. Chapin in 1936.